

measuring  $69\ \mu$  at maturity (Fig. 3). The kenozoids vary in length from  $299\ \mu$  to  $334\ \mu$  and in width from  $75\ \mu$  to  $80\ \mu$ . Structures that may be incipient brown bodies were found in a few of the kenozoids in the proximal tip below the degenerate polypide.

*Terebripora comma* differs from *T. ramosa* d'Orbigny in the following respects: (1) The tentacle number of *T. comma* has 8 tentacles, *T. ramosa* 12, *vide* Marcus; (2) *T. comma* has pseudostolonal connective points; (3) the zoaria of *T. comma* does not conform to the usual *Terebripora-Immergentia* surface pattern as is found in *T. ramosa*.

*Holotype*.—AHF no. 53.

*Repository*.—Allan Hancock Foundation, University of Southern California, Los Angeles, Calif.

*Type locality*.—Accession no. 403 T 112, southwest of Newport, Calif. trawl 112, 18 fathoms, June 16, 1915. In the shell of a dead *Polinices draconis*.

*Additional distribution*.—Hancock station no. 1937-50, 1 mile northwest of the west end of Anacapa Island, Calif., lat.  $34^{\circ} 01' 32''$  N., long.  $119^{\circ} 27' 30''$  W.; depth 38-43 fathoms; bottom sandy; March 24, 1950; in dead shell of *Epitonium* sp.?

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ZOOLOGY.—*A new Orconectes from the Pontchartrain watershed in Louisiana and Mississippi (Decapoda: Astacidae)*.<sup>1</sup> GEORGE HENRY PENN, Tulane University of Louisiana. (Communicated by Fenner A. Chace, Jr.)

The new crawfish described here apparently is limited in distribution to the cool-water, sand- and gravel-bottomed creeks and rivers that make up the Lake Pontchartrain watershed in southeastern Louisiana and adjoining parts of Mississippi. I take great pleasure in naming this new species in honor of my close friend and authority on North American crawfishes, Dr. Horton H. Hobbs, Jr., of the University of Virginia.

*Orconectes (Orconectes) hobbsi*, n. sp.

*Diagnosis*.—Rostrum with prominent lateral spines, upper surface deeply concave, no median carina. Areola very narrow, its length averaging 24 times its width. Thoracic region of cephalothorax about 28 percent of the total length of the cephalothorax. Male with hooks on ischiopodites of third pereopods only. First pleopod of form I male terminating in two long, setiform, deeply split rami; central projection corneous and recurved at right angles to the shaft; mesial proc-

ess troughlike just proximad of the apex, recurved at about  $90^{\circ}$  angle to shaft. Annulus ventralis of female immovable, surface contours and sinus as in Fig. 8; may be either right- or left-handed.

*Holotypic male, form I*.—Body subovate, not depressed (Figs. 1, 2). Abdomen narrower than cephalothorax. Width of cephalothorax at widest point slightly greater than depth at same point.

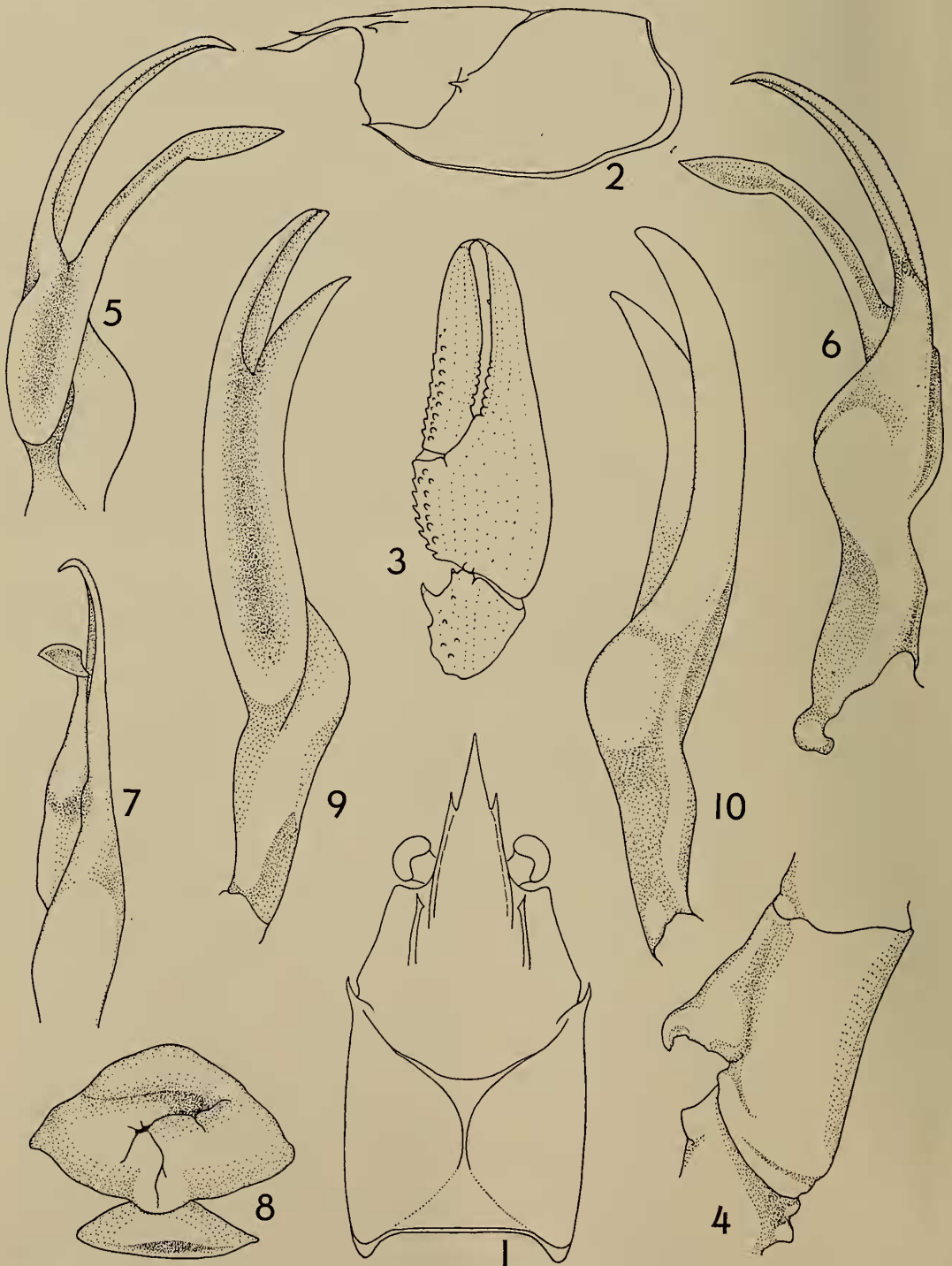
Areola very narrow (24 times longer than width), without any punctations in narrowest part; cephalic portion of cephalothorax about 2.6 times as long as areola; length of areola 28 percent of total length of cephalothorax.

Rostrum with prominent lateral spines; widest at base, margins raised, more or less straight and converging; no median carina. Acumen long, acute.

Postorbital ridges prominent, terminating cephalad in acute corneous spines. Branchiostegal spine small, but prominent. Cephalic groove interrupted in vicinity of cephalolateral spines, the latter very prominently developed.

Cephalic region of telson with two spines in each caudolateral angle, the more lateral spine about twice the length of the mesial one.

<sup>1</sup> Aided by a grant from the University Council on Research of the Tulane University of Louisiana. Received June 23, 1950.



FIGS. 1-10.—*Orconectes (Orconectes) hobbsi*, n. sp.: 1, Dorsal view of cephalothorax of holotype; 2, lateral view of cephalothorax of holotype; 3, upper surface of chela of holotype; 4, hook on ischiopodite of third pereiopod of holotype; 5, mesial view of first pleopod of holotype; 6, lateral view of first pleopod of holotype; 7, caudal view of first pleopod of holotype; 8, annulus ventralis of allotype; 9, mesial view of first pleopod of morphotypic male, form II; 10, lateral view of first pleopod of morphotypic male, form II.

Antennules of usual form.

Antennae broken, approximately equal to total length of crawfish on other specimens. Antennal scales extending slightly beyond apex of rostrum; lateral margin straight or nearly so, swollen, terminating in a strong spine; lamellar portion narrow; greatest width of scale about one-third of total length of scale.

Chela somewhat depressed; palm inflated; inconspicuous setigerous punctations present over most of chela; inner margin of palm with several irregular rows of small tubercles (Fig. 3). Both fingers terminating in short corneous tips bent toward each other. Small tubercles on basal parts of opposable margins of fingers. With medium length tuft of hairs at base of immovable finger. In life both fingers dark blue over basal three-fourths, followed by a narrow white band and bright red apex.

Hooks on ischiopodites of third pereopods only; hooks prominent, greater than half the diameter of the base of the ischiopodite, apex recurved (Fig. 4).

First pleopod reaching anterior margin of coxopodite of third pereopod when abdomen is flexed. Apex terminating in two distinct rami which are separated for most of their lengths (Figs. 5-7). Central projection corneous, long, setiform and recurved caudad at a  $90^\circ$  angle to the shaft. Mesial process swollen just proximad of the tip and trough-like, recurved caudad at about a  $90^\circ$  angle to the shaft.

*Allotypic female*.—Quite similar to the holotype in most respects. Annulus ventralis immovable, subspindle-shaped, with greatest length in transverse axis. Sinus originates near cephalodextral margin, extends irregularly sinistrad across annulus beyond midline, and turns abruptly caudodextrad back to the midline, then caudad on an irregular, somewhat zigzag course to the midcaudal margin of the annulus (Fig. 8).

*Morphotypic male, form II*.—Differs only slightly from the holotype. Hooks on ischiopodites of third pereopods much reduced. First pair of pleopods longer, reaching to anterior margin of coxopodite of second pereopod when abdomen is flexed; without corneous tips on terminal rami; rami separated for less than one-fourth of their lengths (Figs. 9, 10). Central projection stout, slightly excavated along caudo-mesial margin, tip recurved caudad at less than a  $45^\circ$  angle to the shaft. Mesial process shorter than central

projection, stout, tip recurved caudad at less than a  $45^\circ$  angle to the shaft.

*Measurements*.—**HOLOTYPE MALE**: Cephalothorax, height 9.0, width 10.0, length (on mid-dorsal line) 21.0 mm; areola, width at narrowest point 0.25, length 6.0 mm; rostrum, width at base 2.8, length 6.6 mm; abdomen, length to tip of telson 23.0 mm; right chela, length of inner margin of palm 4.2, greatest width of palm 5.6, thickness of palm 3.9, length of outer margin of hand 14.7, length of movable finger 9.0 mm; antennal scale, length of lateral margin 5.6, greatest width 1.9 mm. **ALLOTYPE FEMALE**: Cephalothorax, height 9.1, width 10.5, length on mid-dorsal line 22.5 mm; areola, width at narrowest point 0.25, length 5.95 mm; rostrum, width at base 2.8, length 8.1 mm; abdomen, length to tip of telson 24.0 mm; right chela, length of inner margin of palm 4.2, greatest width of palm 5.6, thickness of palm 3.5, length of outer margin of hand 14.4, length of movable finger 8.4 mm.

*Type locality*.—The holotype and allotype were collected on November 7, 1948, in the headwater creek of Bayou Lacombe at St. Tammany (6 miles north of Lacombe on Louisiana State Highway 187), St. Tammany Parish, La. This is a shallow, spring-fed, sand-bottomed creek about 20 feet wide flowing through cutover longleaf pine flats which are only slightly above sea level (alt. 10 feet). The banks are eroded and shaded by mixed hardwoods and pines. Vegetation is scarce in the water, but drifts of fallen branches and leaves behind sandbars make abundant hiding places for crawfishes and other aquatic invertebrates.

The morphotypic male, form II, was collected July 10, 1948, in the Tehefuncte River, 4 miles west of Covington, St. Tammany Parish, La. This is a creek slightly larger than but essentially similar to the one at the type locality.

*Disposition of types*.—The holotypic male, the allotypic female, and the morphotypic male, form II, are deposited in the United States National Museum, nos. 90952, 90953, and 90954, respectively. From the paratypic series, one male, form I, one male, form II, and one female are deposited in the Museum of Comparative Zoology, and similar series are deposited in the collections of the Academy of Natural Sciences of Philadelphia, the University of Michigan Museum of Zoology, the collection of Dr. Horton H. Hobbs, Jr., of the University of Virginia, and

the American Museum of Natural History. One male, form I, 6 males, form II, 19 juvenile males, 13 females, and 13 juvenile females are retained in the Tulane University collections.

*Specimens examined.*—Sixty-six paratypes of *Orconectes hobbsi* in addition to the three types have been examined from the Lake Pontchartrain watershed in Louisiana and Mississippi. Arranged by parishes (Louisiana) and counties (Mississippi) these records and disposition of the specimens are as follows: *LOUISIANA*: *EAST FELICIANA*: Comite River, 1 mile west of Clinton, III-28-49, F. R. Cagle (TU 990); *LIVINGSTON*: Amite River, 2 miles south of Weiss, VII-3-48, G. H. Penn and M. H. Penn (U. M. M. Z.); *ST. HELENA*: Amite River, 1 mile west of Darlington, VII-3-48, G. H. Penn and M. H. Penn (TU 574); Tickfaw River, 1 mile northeast of Liverpool, VIII-13-48, G. H. Penn and M. H. Penn (TU 775); *ST. TAMMANY*: Tchefuncte River, 4 miles west of Covington, VII-10-48, A. Hagan (morphotype, U. S. N. M.; A. N. S.; A. M. N. H.); Slidell; VI-3-37, P. Viosca and H. B. Chase (TU P.624)

headwaters of Bayou Lacombe at St. Tammany, VI-13-37, P. Viosca and G. H. Penn (TU P-334; A. N. S.); same locality, I-9-38, P. Viosca and G. H. Penn (A. N. S.; U. M. M. Z.); same locality, VII-10-48, A. Hagan (TU 620, M. C. Z.); same locality, XI-7-48, L. L. Ellis (holotype and allotype, U. S. N. M.; TU 852; M. C. Z.); same locality, XI-1-49, G. H. Penn (H. H. Hobbs); same locality, VI-2-50, G. H. Penn and E. W. Smith (TU 1974). *MISSISSIPPI*: *AMITE*: Beaver Creek, 2 miles east of Gloster, VII-4-48, G. H. Penn and M. H. Penn (TU 581); *PIKE*: Bogue Chitto River, 12 miles east of McComb, VII-5-48, G. H. Penn and M. H. Penn (TU 586).

*Relationships.*—*Orconectes hobbsi* is clearly a member of the *Virilis* section of the genus on the basis of the long, setiform, deeply split, recurved rami. Its affinities within the section are not entirely clear at present. The structure of the first pair of pleopods of the form I male and of the rostrum makes it appear closest to *O. palmeri* (Faxon) and *O. creolanus* (Creaser), but it differs from these species in having an open areola, though this is extremely narrow.